# M8920A PXIe Radio Test Set

100 kHz to 3.8/6 GHz

Field radios are a vital lifeline for warfighters, firefighters and peacekeepers. That's why the new Keysight M8920A is designed to deliver the excellence you expect from your radio. All along your lifecycle, we open up capabilities that ranges from deep analysis in design to fast testing in production.







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### Accelerate MilCom and public safety radio manufacturing

Digital 2-way radios being developed for MilCom and the public safety radio market bring new testing challenges and hurdles to overcome for manufacturers and depot testing. Radio technologies are requiring wider bandwidths, higher frequencies, and multiple radio format capabilities.

### **Product description**

Keysight's M8920A PXIe Radio Test Set supports many formats by combining PXI hardware with application-specific software in a single flexible and scalable chassis, providing broad multi-format coverage for next-generation radio testing.

With Keysight's new Radio Test Measurement Application (N9093), you can access and control multiple instruments on one screen while viewing a variety of critical measurements at the same time. Keysight can help deliver the operational excellence you expect from your radio.

### **Applications**

- Cover all necessary analog AM and FM modulation test requirements.
- Test APCO P1/P2, TETRA1, DMR, dPMR, ARIB, and custom modulation formats.
- Test commercial connectivity formats including WLAN, LTE, Bluetooth®, etc.
- All measurements can be performed with one click of a button.
- Test analog Avionics Radios, and your Avionics Databus with optional Databus modules



#### M8920A PXIe Radio Test Set

## **Technical Specifications**

### Definitions and conditions

Specifications describe the warranted performance of calibrated instruments. Data represented in this document are specifications under the following conditions unless otherwise noted.

- Specifications are valid from 40° to 65 °C for individual module temperature, as reported by the module, and 20° to 35 °C for environment temperature unless otherwise noted
- Calibrated instrument has been stored for a minimum of 2 hours within the allowed operating range
- If instrument has previously been stored at a temperature range inside the allowed storage range, but outside the allowed operating range, instrument must have been stored for a minimum of 2 hours within the allowed operating range before turn-on
- 30-minute warm-up time
- Calibration cycle maintained
- The RF, IF, and Source Alignments have been run within the previous 7 days
- An ALL Alignment has been run within the previous 8 hours
- If the temperature has changed more than 5 °C from the previous ALL Alignment

Typical describes additional product performance information that is not covered by the product warranty. It is performance beyond specifications that 80% of the units exhibit with a 95% confidence level. This data, shown in italics, does not include measurement uncertainty, and is valid only at room temperature (approximately 25 °C) after alignment within the stated alignment time and temperature limits.

Nominal values indicate expected performance or describe product performance that is useful in the application of the product but are not covered by the product warranty.

#### Recommended best practices in use

- Use slot blockers and EMC filler panels in empty module slots to ensure proper operating temperatures. Keysight chassis and slot blockers optimize module temperature performance and reliability of test.
- Set chassis fan to high at environmental temperatures above 45 °C.

## RF Analyzer Technical Specifications and Characteristics

Frequency range		
Option 504	100 kHz to 3.8 GHz	
Option 506	100 kHz to 6 GHz	
Analysis bandwidth <sup>1</sup>		
Maximum bandwidth	Option B40 (Standard)	40 MHz
	Option B85	100 MHz
	Option B1X	160 MHz
Frequency Resolution		
RF Analyzer	0.01 Hz (nominal)	
Frequency Accuracy	and of the same to the	
Same as accuracy of internal time base or extended internal timebase	ernai reterence input	
	+ [/time since last adjustment v.s	aging rate) ± temperature effects ± calibration accuracy]
Accuracy <sup>2</sup>	± [(tille silice last adjustillerit x a	aging rate) ± temperature effects ± calibration accuracy
Frequency stability internal TB		
Yearly Aging rate	< ± 0.1 ppm/year (± 1 x 10 <sup>-7</sup> )	
Achievable initial calibration accuracy	± 4 x 10 <sup>-8</sup>	
Residual FM	≤ 0.25 Hz p-p in 20 ms nominal	
Temperature effects		
20 to 30 °C	< ± 1.5 x 10 <sup>-8</sup>	
Triggering		
Trigger	Free run, external 1, external 2,	RF burst, video, line, periodic
Trigger delay range	-15 to 500 ms	
Amplitude range and accuracy specification		. 0.0 dD turisal
Antenna input port	100 kHz to 1 MHz 1 MHz to 3.9 GHz	± 0.6 dB typical
Range: -70 dBm to +23 dBm	3.9 GHz to 6 GHz	$\pm$ 1 dB, $\pm$ 0.55 dB typical $\pm$ 1.5 dB, $\pm$ 0.95 dB typical
T/R port high power attenuation ON	100 kHz to 1 MHz	± 0.8 dB Typical
Range: -30 dBm to +47 dBm	1 MHz to 3.9 GHz	± 1 dB, ± 0.85 dB Typical
range50 dbin to 147 dbin	3.9 GHz to 6 GHz	± 1.4 dB, ± 0.95 dB Typical
T/R port high power attenuation OFF	100 kHz to 1 MHz	± 0.8 dB Typical
Range: -50 dBm to +30 dBm	1 MHz to 3.9 GHz	± 1 dB, ± 0.85 dB Typical
	3.9 GHz to 6 GHz	± 1.45 dB, ± 0.95 dB Typical
Maximum RMSsafe power input		
T/R port high power attenuation ON	+47 dBm (50 W)	
T/R port high power attenuation OFF	+33 dBm (2 W)	
RF antenna port	+30 dBm (1 W)	
Maximum RMS RF specified performance leve	el	
T/R port high power attenuation ON		30 W or 5 minutes on and 5 minutes off (> 30 and < 45 $^{\circ}$ C ambient)
RF antenna port	+23 dBm	
TX post-demod audio filters		
Low Pass Filter	300 Hz, 3 kHz, 15 kHz, 30 kHz, 8	
High Pass Filters	20 Hz, 50 Hz, 300 Hz, or 400 Hz	
Band Pass Filters (weighted)		ec. P.53), A-weighted (ANSI-IEC "A" weighted, per IEC Rec
		1995), C-message (C-Message per IEEE743), CCIR-1k 2k weighted (Dolby 2 K), CCIR unweighted (CCIR Rec 468)
Manual Select Filter	For either LPF or HPF User Defin	

<sup>1.</sup> Instantaneous bandwidth (1 dB bandwidth) available around a center frequency overwhich the input signal can be digitized for further analysis or processing in the time, frequency or modulation domain.

<sup>2.</sup> Calibration accuracy depends on how accurately the frequency standard was adjusted to 10 MHz. If the adjustment procedure is followed, the calibration accuracy is given by the specification. Achievable Initial Calibration Accuracy.

<sup>3.</sup> The 3-dB cutoff frequency can be selected for the User-defined audio filters.

## RF Analyzer Technical Specifications and Characteristics (Continued)

Phase noise RF T/R <sup>1</sup> port and antenna port	
Phase noise sidebands, (CF = 500 MHz)	
1 kHz offset	-107 dBc/Hz typical
10 kHz offset	-111 dBc/Hz typical
100 kHz offset	-111 dBc/Hz typical
	71
1 MHz offset	-133 dBc/Hz typical
Spurious responses -Residual response in specific	ed trequency ranges
Antenna input port ranged to -70 dBm	77 dD t
< 200 MHz	-77 dBm typical
200 MHz to 6 GHz	-95 dBm typical
T/R port high power attenuation OFF ranged to -70 dBi	
< 200 MHz	- 90 dBm typical
200 MHz to 6 GHz	-90 dBm typical
T/R port high power attenuation ON ranged to 0 dBm	
< 200 MHz	-90 dBm typical
200 MHz to 6 GHz	-80 dBm typical
Input related spurs, input -10 dBm range	< -62 dBm typical
Display Average Noise Level (DANL) with analyzer	ranged to -70 dBm
Antenna input port	
100 kHz to 1 MHz	-142 dBm typical
1 MHz to 200 MHz	-155 dBm, -160 dBm typical
200 MHz to 900 MHz	-157 dBm, -161 dBm typical
900 MHz to 2.1 GHz	-154 dBm, -158 dBm typical
2.1 GHz to 3.2 GHz	-148 dBm, -153 dBm typical
3.2 GHz to 4.8 GHz	-151dBm, -156 dBm typical
4.8 GHz to 6 GHz	-145dBm, -150dBm typical
T/R port high power attenuation OFF	
100 kHz to 1 MHz	-135 dBm typical
1 MHz to 200 MHz	-129 dBm, -144 dBm typical
200 MHz to 900 MHz	-144 dBm, -149 dBm typical
900 MHz to 2.1 GHz	-140 dBm, -145 dBm typical
2.1 GHz to 3.2 GHz	-134 dBm, -139 dBm typical
3.2 GHz to 4.8 GHz	-137dBm, -142 dBm typical
4.8 GHz to 6 GHz	-129dBm, -134dBm typical
T/R port high power attenuation ON	• • • • • • • • • • • • • • • • • • •
100 kHz to 1 MHz	-120 dBm typical
1 MHz to 200 MHz	-114 dBm, -127 dBm typical
200 MHz to 900 MHz	-126 dBm, -131 dBm typical
900 MHz to 2.1 GHz	-122 dBm, -127 dBm typical
2.1 GHz to 3.2 GHz	-116 dBm, -121 dBm typical
3.2 GHz to 4.8 GHz	-119dBm, -124 dBm typical
4.8 GHz to 6 GHz	-114dBm, -119dBm typical
Input voltage standing wave ratio (VSWR) (Attenuator	
RF T/R port	< 1.4:1 (nominal)
Antenna port	< 1.8:1 (nominal)
Triggering	· '
Trigger	Free run, external 1, external 2, RF burst, video, line, periodic
IQ analyzer	
Trigger delay range	-15 to 500 ms
Resolution	0.1 μs
	To the state of th

T/R port high power attenuation OFF
 Except at 100 MHz, 5 GHz, and 5.5 GHz

## RF Generator Technical Specifications and Characteristics

Frequency range			
Option 504	100 kHz to 3.8 GHz		
Option 506	100 kHz to 6 GHz		
Arb baseband bandwidth			
Option B40 (Standard)	100 kHz – 30 MHz	20 MHz	
,	30 MHz – 60 MHz	40 MHz	
	60 MHz – 220 MHz	20 MHz	
	220 MHz – 340 MHz	40 MHz	
	340 MHz – 6 Ghz	40 MHz	
Option B10	100 kHz – 340 MHz	Same as Option B40	
	340 MHz – 400 MHz	80 MHz 80 MHz	
Option B1X	400 MHz – 6 GHz 100 kHz – 400 MHz	Same as Option B10	
Option B1X	400 MHz – 6 GHz	160 MHz	
Frequency Resolution	700 IVII IZ - 0 GI IZ	TOO IVII IZ	
RF Generator	0.1 Hz (nominal)		
Frequency Accuracy	0.1112 (Hollinal)		
Same as accuracy of internal time base or exter	nal reference innut		
Internal timebase	nai reference input		
Accuracy <sup>1</sup>	+ [/time since last adjustm	nent x aging rate) ± temperature	offects + calibration accuracy
Frequency stability internal TB	± [(time since last adjustin	ient x aging rate) ± temperature	enects ± calibration accuracy]
Yearly Aging rate	0.4 . 4 . 4 . 4	. 7)	
	< ± 0.1 ppm/year (± 1 x 10	-1)	
Achievable initial calibration accuracy	± 4 x 10 <sup>-8</sup>		
Residual FM	≤ 0.25 Hz p-p in 20 ms nor	minal	
Temperature effects			
20 to 30 °C	< ± 1.5 x 10 <sup>-8</sup>		
Amplitude level accuracy <sup>2</sup>			
Generator port levels	100 kHz to 1 MHz	1 MHz to 3.6 GHz	3.6 GHz to 6 GHz
> 0 dBm	± 0.8 dB typical	$\pm$ 1.5 dB, $\pm$ 0.8 dB typical	± 1.65 dB, ± 1.2 dB typical
0 dBm to -60 dBm	± 0.65 dB typical	$\pm$ 1.1 dB, $\pm$ 0.7 dB typical	± 1.45 dB, ± 0.85 dB typical
-60 dBm to -110 dBm	± 0.65 dB typical	± 1.25 dB, ± 0.95 dB typical	± 1.6 dB, ± 1.0 dB typical
< -110 dBm	± 0.55 dB nominal	± 0.95 dB nominal	± 1.0 dB nominal
T/R port high power attenuation ON			
> -40 dBm	± 0.65 dB typical	± 1.4 dB, ± 0.8 dB typical	± 1.75 dB, ± 1.4 dB typical
-40 dBm to -100 dBm	± 0.9 dB typical	± 1.4 dB, ± 0.9 dB typical	± 1.75 dB, ± 1.5 dB typical
< -100 dBm	± 1.5 dB nominal	± 1.0 dB nominal	± 1.5 dB nominal
T/R port high power attenuation OFF			
> 0 dBm	± 0.75 dB typical	± 1.2 dB, ± 0.6 dB typical	± 1.35 dB, ± 0.7 dB typical
0 dBm to -60 dBm	± 0.55 dB typical	± 1.4 dB, ± 0.75 dB typical	± 1.4 dB, ± 0.85 dB typical
-60 dBm to -110 dBm	± 1.2 dB typical	± 1.3 dB, ± 1.0 dB typical	± 1.5 dB, ± 0.85 dB typical
< -110 dBm	± 1.5 dB nominal	± 1.0 dB nominal	± 1.5 dB nominal

<sup>.</sup> Calibration accuracy depends on how accurately the frequency standard was adjusted to 10 MHz. If the adjustment procedure is followed, the calibration accuracy is given by the specification. Achievable Initial Calibration Accuracy.

<sup>2.</sup> Specifications apply when input port is set to Antenna In

## RF Generator Technical Specifications and Characteristics (Continued)

Phase raise (CE = 500 MUL)		
Phase noise, (CF = 500 MHz) Gen port (+10 dBm output); T/R port (0 dBm output)		
1 kHz offset	< -115 dBc/Hz typical	
10 kHz offset	< -112 dBc/Hz typical	
100 kHz offset	< -118 dBc/Hz typical	
1 MHz offset	< -137 dBc/Hz typical	
Harmonics (T/R port and Gen port)	<-137 UBC/112 typical	
Generator port at +10 dBm	100kHz to 60MHz	-34 dBc, -40 dBc nominal
Generator port at +10 dbm	60 MHZ to 6 GHz	-30 dBc, -36 dBc nominal
T/R port high power attenuation ON at 0 dBm	100kHz to 60MHz	-35 dBc, -40 dBc nominal
1/11 port high power attenuation on at 0 dbin	60 MHZ to 6 GHz	-30 dBc, -38 dBc nominal
T/R port high power attenuation OFF at -15 dBm	100kHz to 60MHz	-40 dBc nominal
1/10 port high power attenuation of 1 at -13 dbin	60 MHZ to 6 GHz	-40 dBc nominal
Non-harmonics	OU IVII IZ IU U UI IZ	-40 add nonlinal
Generator port at 0 dBm	100kHz to 60MHz	-65 dBc nominal
Contrator port at 6 dBm	60 MHZ to 6 GHz	-70 dBc nominal
T/R port high power attenuation ON at 0 dBm	100kHz to 60MHz	-63 dBc nominal
1717 port high power attenuation on at a defin	60 MHZ to 6 GHz	-70 dBc nominal
T/R port high power attenuation OFF at -15 dBm	100kHz to 60MHz	-65 dBc nominal
1717 port high power attenuation of 1 at 10 dbin	60 MHZ to 6 GHz	-70 dBc nominal
Sub-harmonics	00 IVII IZ (0 0 01 IZ	-10 dbc nominal
Generator Port at +10 dBm	> 3 GHz	-40 dBc nominal
T/R port high power attenuation ON at 0 dBm	> 3Ghz	-40 dBc nominal
T/R port high power attenuation OFF at -15 dBm	> 3GHz	-40 dBc nominal
Input voltage standing wave ratio (VSWR)	- 00112	10 dBo Hoffillia
RF T/R port	< 1.6:1 (nominal)	
Generator port	< 1.8:1 (nominal)	
Noise floor	Tiot (normal)	
RF T/R port and Gen port (at –40 dBm output)	100 kHz to 60 MHz: -155 dF	Bm typical; 60 MHz to 6 GHz < -160 dBm typical
Generator output level range		
RF T/R port		
100 kHz to 6 GHz (T/R port high power attenuation OFF)	-130 to +3 dBm	
100 kHz to 6 GHz (T/R port high power attenuation ON)	-130 to -20 dBm, settable	to -15 dBm
RF Gen port		
100 kHz to 6 GHz	-130 to +3 dBm	
100 kHz to 6 GHz (Option M8920A-1EA)	-130 to +13 dBm, settable	to +15 dBm
Generator Resolution	·	-
Power	0.02 dB (nominal)	-
Frequency	0.10 Hz (nominal)	
Generator Maximum Reverse Power Protection (RPP)	, ,	
RF Gen port	10 W for 15 sec. with alarm	

## Audio Module Technical Specifications and Characteristics

	•	
	Audio generator output performance	Audio analyzer input performance
M9260A PXI module		
Impedance	$50~\Omega$ and $600~\Omega$	50 $\Omega$ , 600 $\Omega$ , and 1 M $\Omega$
Audio frequency range	5 Hz to 79.8 kHz	10 Hz to 80 kHz
Audio frequency resolution	363.8 μHz	363.8 µHz
Audio frequency accuracy	± 1ppm nominal + 100 μHz	± 2ppm + 100 μHz
Voltage range	10 μVp to 10 Vp	10 μVp to 46Vp
Amplitude accuracy	± 0.8 %	±1%
Amplitude resolution	1 μV	1 μV
Coupling	AC, DC	AC, DC
Channels per module	2 – BNC output channels	2 – BNC input channels
Max voltage amplitude	10 Vp output	46 Vp Input
DC accuracy	± 1%	± 1%
AC accuracy	± 1.0% at 1 kHz	$\pm 0.58\% (\pm 0.05 dB)$
SINAD Measurement		
Frequency range		100 Hz to 20 kHz
Range		0 dB to 50 dB (nominal)
Accuracy		± 1 dB (nominal)
Voltage range		1 mV to 10 V
Distortion Measurement		
Frequency range		100 Hz to 20 kHz
Accuracy		± 0.05% (nominal)
Measurement Range		1% to 50% (nominal)
Resolution		1% (nominal)
Voltage range		1 mV to 10 V
Hum and Noise Measurement		
Frequency		300 Hz to 3 kHz (nominal)
Range		-90 dB to 0 dB (nominal)
Resolution		0.1 dB (nominal)
Signal to Noise Ratio (SNR) Measureme	ent¹	
Frequency		300 Hz to 3 kHz (nominal)
Range		-80 dB to 0 dB (nominal)
Accuracy		± 1 dB (nominal)
<ol> <li>Using two-step RMS Ratio n</li> </ol>	nethod. Refer to M8920A Measurement Guide, Measuri	ng RX FM Hum and Noise For noisier

Using two-step RMS Ratio method. Refer to M8920A Measurement Guide, Measuring RX FM Hum and Noise. For noisier signals, built-in SNR estimate method is not as accurate.

#### Audio Module RX Audio Filters

#### **RX** audio filters

Low Pass Filter 3 kHz, 15 kHz, 30 kHz, 80 kHz High Pass Filters 20 Hz, 50 Hz, 300 Hz, or 400 Hz

Band Pass Filters (weighted) CCITT (ITU-T Rec. 041, ITU-T Rec. P.53), A-weighted (ANSI-IEC "A" weighted, per IEC Rec

179), C-message (C-Message per IEEE743), CCIR-1k weighted (CCIR Rec 468), CCIR-2k

weighted (Dolby 2 K)

Manual Select Filter For LPF User Defined<sup>1</sup>

<sup>1.</sup> The 3-dB cutoff frequency can be selected for the User-defined audio filters.

## Radio Test Application Specifications

## N9093EM0E basic analog demodulation measurement application key specifications

	Modulation performance	Demodulation performance
Frequency modulation	mountainen periormanee	20 por o
FM deviation	100 Hz to 100 kHz (settable to 1 Hz)	Peak Dev 1 kHz to 100 kHz
FM deviation accuracy	± 0.2% (nominal)	± 0.1% (nominal) rate < 20 kHz ± 1.2% (nominal) rate 20 kHz to 40 kHz
FM rate (settable range)	10 Hz to 40 kHz	20 Hz to 50 kHz
Residual distortion	0.6% (nominal)	± 0.45% (nominal) rate < 20 kHz ± 1.3% (nominal) rate 20 kHz to 40 kHz
Residual FM		1 Hz
Amplitude modulation		
AM depth	1% to 90%	1% to 99%
AM depth accuracy	± 0.2% (nominal) depth 30% to 90% ± 2.2% (nominal) depth < 30% or > 90%	± 0.9 (nominal) depth 10% to 95%
AM rate (settable range)	10 Hz to 10 kHz	20 Hz to 40 kHz
Residual distortion	± 0.1% (nominal) depth 30% to 90% ± 1.0% (nominal) depth < 30% or > 90%	1.5% (nominal) depth 10% to 95%
Phase modulation		
PM deviation	0.1 to 10 rad	0.2 to 10 rad
PM deviation accuracy	± 0.3% (nominal) 0.3 to 10 radians	± 0.3% (nominal) rate 500 Hz to 4 kHz ± 3.0% (nominal) rate < 500 Hz
PM rate (settable range)	30 Hz to 6 kHz	100 Hz to 4 kHz
Residual distortion	0.4% (nominal) 0.3 to 10 radians	0.5% (nominal) dev > 1 Radian 3% (nominal) dev < 1 Radian
SINAD Measurement		
Range		0 dB to 50 dB (nominal)
Accuracy		± 1 dB (nominal)
Distortion Measurement		
Range		1% to 50% (nominal)
Resolution		1% (nominal)
Hum and Noise Measurement		
Frequency		300 Hz to 3 kHz (nominal)
Range		-90 dB to 0 dB (nominal)
Resolution		0.1 dB (nominal)
Signal to Noise Ratio (SNR) Measurement <sup>1</sup>		
Frequency		300 Hz to 3 kHz (nominal)
Range		-80 dB to 0 dB (nominal)
Accuracy	d. Defeate M0020A Messurement Cuide Messurin	± 1 dB (nominal)

Using two-step RMS Ratio method. Refer to M8920A Measurement Guide, Measuring TX FM Hum and Noise. For noisier signals, built-in SNR estimate method is not as accurate.

## N9093EM1E basic digital demodulation measurement application key specifications

	Modulation performance	Demodulation performance
EVM	± 0.5% typical	± 0.6% typical
Mag error	± 0.3% typical	± 1.3% typical
FSK error	± 0.3% typical	± 1.0% typical
Deviation error	± 0.1% typical	± 1.0% typical

## Connectivity Test Application Specifications

### WLAN 802.11ac

	Description
EVM at antenna port	-44.5 dB (typical) at -20 dBm input power BW 80 MHz
	-42.5 dB (typical) at -20 dBm input power BW 160 MHz
EVM at generator port	-47 dB (typical) at -5 to -15 dBm output BW 80 MHz
	-45 dB (typical) at -5 to -15 dBm output BW 160 MHz

### LTE-FDD/TDD

Specifications from 700 MHz to 2.6 GHz	
EVM at antenna port	0.8% Typ, 0.6% nominal at -10 dBm input power BW 20MHz
ACP at antenna port	-53 dBc Typical at -10 dBm input Downlink
	-56 dBc typical at -10 dBm input Uplink
Composite EVM at generator port	0.8% at 0 dBm output power BW 20MHz
ACP at generator port	-60 dBc at -10 dBm output power Downlink
	-60 dBc at -10 dBm output power Uplink

### Bluetooth

	Description
DEVM at generator port	1% nominal at 0 dBm output
EDR floor at antenna port	0.6% Typical at 0 dBm input power

### Front Panel M9470A RF Interface Module Connections

RF connections	
RF T/R port	SMA female, 50 $\Omega$ nominal
RF antenna	SMA female, 50 $\Omega$ nominal
RF Gen port	SMA female, 50 $\Omega$ nominal
Other connections	
Frequency reference input	10 MHz, -5 to +10 dBm, nominal, SMB female, 50 $\Omega$ nominal
Frequency reference output	10 MHz, $\pm$ (10 MHz x frequency reference accuracy), > 0 dBm, SMB female, 50 $\Omega$ nominal

### **General Specifications**

I/O characteristics M9037A controller module

Front panel connections

USB Four USB 2.0 (type A), Two USB 3.0 ports

Ethernet Two 10/100/1000BASE-T (RJ45)

Video Dual Mode DisplayPort+ (DVI-D, VGA, HDMI with an adapter)

GPIB Micro-D 25-pin
PCIe connector x8 PCIe connector

PXI trigger SMB (programmable direction)

Data storage (M9037A controller)

Internal 240 GB removable solid-state drive

External Supports USB 2.0 or 3.0 compatible memory devices

Temperature range

Operating 0 to 45  $^{\circ}$ C Storage -40 to 70  $^{\circ}$ C

**EMC** 

Complies with European EMC Directive 2014/30/EU

- IEC/EN 61326-1
- CISPR Pub 11 Group 1, class A
- AS/NZS CISPR
- ICES/NMB-001

This ISM device complies with Canadian ICES-001

Cet appareil ISM est conforme à la norme NMB-001 du Canada

#### **Environmental stress**

Samples of this product have been type tested in accordance with the Keysight Environmental Test Manual and verified to be robust against the environmental stresses of storage, transportation, and end-use; those stresses include, but are not limited to, temperature, humidity, shock, vibration, altitude, and power line conditions; test methods are aligned with IEC 60068-2 and levels are similar to MILPRF-28800F Class 3.

Power regul	iramante	(10-slot	chaesis)

Voltage/Frequency/Power (low-line)

100 to 120 V, 50/60/400 Hz, 735 W (nominal)

Voltage/Frequency/Power (high-line)

220 to 240 V, 50/60 Hz, 1300 W, (nominal)

Weight (M9010A 10-slot chassis with basic modules)

Net 17.5 kg (38.7 lbs), nominal

Dimensions (M9010A 10-slot chassis)

Height 194.8 mm (with feet installed)

 Width
 322.5 mm

 Length
 552.5 mm

Warranty

The M8920A Radio Test Set is supplied with a Standard one-year warranty

Calibration cycle

The recommended calibration cycle is one year; calibration services are available through Keysight service centers

### **Related Literature**

For more detailed product and specification information refer to the following literature and web pages:

Publication title	Publication number
M8920A PXIe Radio Test Set Technical Overview	5992-2821EN
M8920A PXIe Radio Test Set Configuration Guide	5992-2800EN
M8920A PXIe Radio Test Set Getting Started Guide	M8920-90001
M9470A PXIe 50W Interface Module Data Sheet	5992-3140EN
M9421A VXT PXIe Vector Transceiver Data Sheet	5992-1646EN
M9260A PXIe Audio Analyzer Data Sheet	5992-1918EN
PXIe Chassis Spec Guide	M9019-90015
PC Tested Configurations with PXIe Chassis Technical Overview	5990-7632EN
M9037A PXIe Embedded Controller Spec Guide	M9037-90015
Interface Modules and Adapters for PXIe Systems	5992-0377EN
M924XA InfiniiVision PXIe Modular Oscilloscopes Data Sheet	5992-2003EN
6.5 Digit PXI Digital Multimeter Data Sheet	5992-2757EN
PXIe Vector Network Analyzer Configuration Guide	5991-4885EN
PXI Avionics Bus Interface Cards Configuration Guide	5992-2448EN
89600 VSA Software Configuration Guide	5990-6386EN

### **Additional Information**

Product webpages:

www.keysight.com/find/M8920A

www.keysight.com/find/N9093

www.keysight.com/find/PXI

X-Series measurement applications:

www.keysight.com/find/X-Series\_Apps

Signal Studio Software:

www.keysight.com/find/signalstudio

89600 VSA Software:

www.keysight.com/find/89600

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